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| 10/813,286 | 03/30/2004 | Matthew Compton | 282553US8X | 4541 |

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| EXAMINER |
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FINDLEY, CHRISTOPHER G

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| ART UNIT | PAPER NUMBER |
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2482

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--|---------------------------------------|--|
| Office Action Summary | Application No. 10/813,286 | Applicant(s) COMPTON ET AL. | |
| | Examiner CHRISTOPHER FINDLEY | Art Unit 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-21 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-21 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 25-27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-7, 9-21, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Compton et al. (US 20030174734 A1, hereinafter referred to as "Compton") in view of Matsumura et al. (US 20030189953 A1, hereinafter referred to as "Matsumura").**

Re **claim 1**, Compton discloses a method of synchronizing the frequency of a local image frame synchronization signal generator of a local video data processor in communication with an asynchronous switched packet network to the frequency of a reference image frame synchronization signal generator of a reference video data processor also coupled to said network, said local and reference processors having respective clocks, said reference and local image frame synchronization signal generators generating periodic image frame synchronization signals in synchronism with said reference and local clocks respectively, said method comprising the steps of: frequency synchronizing said local and reference clocks (Compton: paragraph [0010]); said reference video data processor sending, via said network, to said local data processor one image timing packet providing reference image frame synchronization data indicating a difference in timing, measured with respect to said reference processor's clock, between a time at which said image timing packet is launched onto said network and a time of production of a reference image frame synchronization signal (Compton: paragraphs [0010]-

[0012]); and sending to said local video data processor from said reference video data processor, via said network, data packets containing said video data, said image timing packet being sent independently of said data packets (Compton: paragraph [0012]).

Compton further discloses that the disclosure of Compton may be used in conjunction with a phase synchronizer (Compton: paragraph [0010]; paragraph [0070]), but Compton does not explicitly disclose said local video data processor controlling the phase of production of said local image frame synchronization signals in dependence on said reference image frame synchronization data and a time of arrival of said one image timing packet. However, Matsumura discloses a communication system, wherein phase shifts are calculated based on reference timing signals in order to eliminate the disparity and synchronize the phase (Matsumura: paragraphs [0050]-[0051]). Since both Compton and Matsumura relate to synchronization based on the timing difference between clock signals, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the phase synchronization of Matsumura with the frequency synchronization of Compton in order to ensure synchronized playback of media streams.

Re **claim 2**, Compton discloses that said controlling includes adjusting said time of production of said local image frame synchronization signal by a correction amount derived from a difference between said reference image frame synchronization data and a time, measured with respect to said local processor's clock and said local image frame synchronization signal, of arrival of said timing packet (Compton: paragraph [0035]).

Re **claim 3**, Compton discloses sending to said local processor a plurality of said timing packets from said reference processor (Compton: paragraph [0035], "successive time packets" indicates several are transmitted); and controlling, by said local processor, said timing of said production of said local image frame synchronization signal in dependence on a function of said differences between: reference image frame synchronization data in said timing packets; and respective times of arrival of said timing packets at said local processor (Compton: paragraphs [0036]-[0037]).

Re **claim 4**, Compton discloses that said function is an average of said differences (Compton: paragraphs [0036]-[0037], a cumulative difference is determined).

Re **claim 5**, Compton discloses adding a delay to said local image frame synchronization signal (Compton: paragraph [0038], delay D).

Re **claim 6**, Compton discloses that said delay is a predetermined delay (Compton: paragraph [0038], delay D is fixed).

Re **claim 7**, Compton discloses that said reference data processor includes a source of video data produced synchronously with said reference processor's clock (Compton: Fig. 1, source of video packets 8).

Re **claim 9**, Compton discloses sensing, by said reference processor, when said network has capacity to carry an image timing packet; and sending, from said reference processor, an image timing packet when such network capacity exists (Compton: paragraph [0014]).

Re **claim 10**, Compton discloses that said frequency synchronizing said local and reference clocks includes the steps of: sending to said local data processor from said reference processor, via said network, clock timing packets each providing a destination address of said local processor and reference clock data indicating a time at which said clock timing packet is sent (Compton: paragraph [0010]); and controlling, by said local processor, said frequency of said local processor's clock in dependence on said reference clock data and times of arrival of said clock timing packets (Compton: paragraph [0010]).

Re **claim 11**, Compton discloses counting cycles of said reference processor's clock by said reference processor (Compton: paragraph [0033]); and setting, by said reference processor, said reference clock data as said count of cycles of said reference processor's clock in dependence on a time at which said clock timing packet containing said reference clock data is launched onto said network (Compton: paragraph [0033]).

Re **claim 12**, Compton discloses counting cycles of said local processor's clock by said local processor (Compton: paragraph [0016]); generating, by said local processor, local clock data as a count of cycles of said local processor's clock at a time of receipt of a clock timing packet containing reference clock data (Compton: paragraph [0015]); and controlling, by said local processor, said local processor's clock in dependence on an error signal dependent on a difference between said reference clock data in successively received timing packets and a difference between local clock data indicating said local clock

time at said times of receipt of said timing packets (Compton: paragraph [0015]).

Re **claim 13**, Compton discloses low pass filtering said error signal to generate a low-pass filtered error signal (Compton: paragraph [0017]).

Re **claim 14**, Compton discloses receiving said low-pass filtered error signal in said local processor (Compton: paragraph [0017]); and controlling, by said local processor, said local processor's clock in dependence on said received error signal (Compton: paragraph [0017]).

Re **claim 15**, Compton discloses that said clock timing packet containing said reference image frame synchronization data is independent of said reference clock data (Compton: paragraph [0012], timing packets may be independent).

Re **claim 16**, Compton discloses that said timing packet containing said reference image frame synchronization data also contains said reference clock data (Compton: paragraph [0013], the packets may include both timing data and the data processed synchronously with the reference clock).

Re **claim 17**, Compton discloses aligning, in said local processor, an image of a video signal with said local image frame synchronization signal (Compton: paragraph [0059], video packets are synchronized).

Re **claim 18**, Compton discloses that said image frame synchronization signal is a field or frame synchronization signal (Compton: paragraph [0007], the system incorporates MPEG, which utilizes frames and fields for video).

Re **claim 19**, Compton discloses that said reference image frame synchronization data indicates a difference in timing, measured with respect to said reference processor's clock, between a time at which said image timing packet is launched onto said network and a time of production of an immediately preceding reference image frame synchronization signal (Compton: paragraph [0007], MPEG inherently includes presentation timestamps and program clock references among other synchronization data).

Re **claim 20**, Compton discloses that timing packets carrying information relating to at least two image frame synchronization signals are launched onto said network (Compton: paragraph [0035], "successive time packets" indicates several are transmitted).

Re **claim 21**, Compton discloses a computer readable storage medium encoded with program

code which when executed by a computer cause a processor to carry out the method according to claim 1 (Compton: paragraph [0069]).

Re **claim 25**, Compton discloses a video network, comprising: a reference video data processor including a reference image frame synchronization signal generator and a reference clock generator, said reference synchronization signal generator configured to generate periodic image frame synchronization signals in synchronism with said reference clock (Compton: paragraph [0033]); a local video data processor including a local image frame synchronization signal generator and a local clock generator frequency-locked to said reference clock generator, said local synchronization signal generator configured to generate periodic image frame synchronization signals in synchronism with said local clock, and synchronizing frequency of a local clock from said local clock generator and a reference clock from said reference clock generator (Compton: paragraph [0034]); an asynchronous packet-based network linking said local processor and said reference processor (Compton: paragraph [0031]); said reference video data processor includes a sending unit configured to send, via said network, to said local data processor one image timing packet providing reference image frame synchronization data indicating a difference in timing, measured with respect to said reference processor's clock, between a time at which said image timing packet is launched onto said network and a time of production of a reference image frame synchronization signal (Compton: paragraph [0033]); and said reference video data processor sending to said local video data processor, via said network, data packets containing said video data, said image timing packet being sent independently of said data packets (Compton: paragraph [0012]).

Compton further discloses that the disclosure of Compton may be used in conjunction with a phase synchronizer (Compton: paragraph [0010]; paragraph [0070]), but Compton does not explicitly disclose said local processor including a controlling unit configured to adjust the phase of production of said local image frame synchronization signal in dependence on said reference image frame synchronization data and said time of arrival of said one timing packet. However, Matsumura discloses a communication system, wherein phase shifts are calculated based on reference timing signals in order to eliminate the disparity and synchronize the phase (Matsumura: paragraphs [0050]-[0051]). Since both Compton and Matsumura relate to synchronization based on the timing difference between clock signals,

one of ordinary skill in the art at the time of the invention would have found it obvious to combine the phase synchronization of Matsumura with the frequency synchronization of Compton in order to ensure synchronized playback of media streams.

Re **claim 26**, Compton discloses a local video data processor including a local image frame synchronization signal generator and a local clock generator frequency-lockable to a reference clock generator at a reference video data processor and configured to connect to said local video data processor via an asynchronous packet-based network, said local synchronization signal generator configured to generate periodic image frame synchronization signals in synchronism with said local clock, said local video data processor comprising: a controlling unit configured to synchronize frequency of a local clock from said local clock generator and a reference clock from said reference clock generator, wherein said reference video data processor sending to said local video data processor, via said network, data packets containing said video data, said image timing packet being sent independently of said data packets (Compton: paragraph [0033]).

Compton further discloses that the disclosure of Compton may be used in conjunction with a phase synchronizer (Compton: paragraph [0010]; paragraph [0070]), but Compton does not explicitly disclose a controlling unit configured to adjust the phase of production of said local image frame synchronization signal in dependence on one received image timing packet providing reference image frame synchronization data received indicating a difference in timing, measured with respect to a clock of said reference processor, between a time at which the image timing packet is launched onto said network and a time of production of a reference image frame synchronization signal, provided by the image timing packet from said reference clock generator and a time of arrival of the one image timing packet. However, Matsumura discloses a communication system, wherein phase shifts are calculated based on reference timing signals in order to eliminate the disparity and synchronize the phase (Matsumura: paragraphs [0050]-[0051]). Since both Compton and Matsumura relate to synchronization based on the timing difference between clock signals, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the phase synchronization of Matsumura with the frequency synchronization of Compton in order to ensure synchronized playback of media streams.

Re **claim 27**, Compton discloses a reference video data processor, comprising: a reference image frame synchronization signal generator and a reference clock generator (Compton: paragraph [0014]); said reference synchronization signal generator configured to generate periodic image frame synchronization signals in synchronism with said reference clock (Compton: paragraph [0014]); said reference processor configured to connect via an asynchronous packet-based network to a local video data processor having a local image frame synchronization signal generator and a local clock generator frequency-lockable to said reference clock generator, said local frame synchronization signal generator configured to generate periodic image frame synchronization signals in synchronism with said local clock (Compton: paragraph [0010]); and said reference video data processor sending to said local video data processor, via said network, data packets containing said video data, said image timing packet being sent independently of said data packets (Compton: paragraph [0012]), wherein frequency of a local clock from said local clock generator and a reference clock from said reference clock generator is synchronized (Compton: paragraph [0015]).

Compton further discloses that the disclosure of Compton may be used in conjunction with a phase synchronizer (Compton: paragraph [0010]; paragraph [0070]), but Compton does not explicitly disclose said reference video data processor including a phase synchronization unit configured to synchronize a phase of the local image frame synchronization signal generator and a phase of the reference synchronization generator by sending, via said network, to said local data processor one image timing packet providing reference image frame synchronization data indicating a difference in timing, measured with respect to said reference processor's clock, between a time at which said one image timing packet is launched onto said network and a time of production of a reference image frame synchronization signal. However, Matsumura discloses a communication system, wherein phase shifts are calculated based on reference timing signals in order to eliminate the disparity and synchronize the phase (Matsumura: paragraphs [0050]-[0051]). Since both Compton and Matsumura relate to synchronization based on the timing difference between clock signals, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the phase synchronization of Matsumura with the frequency synchronization of Compton in order to ensure synchronized playback of media

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streams.

Re **claim 28**, Compton discloses an asynchronous switched network comprising a plurality of nodes, at least one of which nodes is coupled to a data processor that carries out the method of claim 1 (Compton: Fig. 1, asynchronous switched network 6; paragraph [0031]).

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER FINDLEY whose telephone number is (571)270-1199. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571)272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2482

/Christopher Findley/